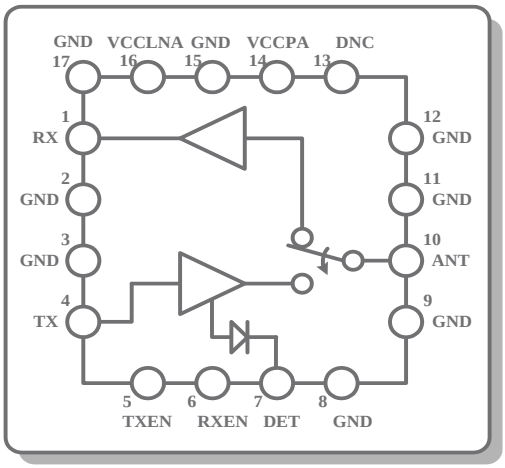
CMOS 2.4GHZ TRANSMIT/RECEIVE WLAN RFeIC



Description

The RFX2402C is a fully integrated, single-chip, single-die RFeIC (RF Front-end Integrated Circuit) which incorporates all the RF functionality needed for today's wireless communications. The RFX2402C architecture integrates the PA, LNA, Transmit and Receive switching circuitry, the associated matching network, and a harmonic filter all in a CMOS single-chip device. This RFeIC is designed for use in 802.11b/g/n applications operating at 2.4GHz. Combining superior performance, high sensitivity and efficiency, low noise, small form factor, and low cost, the RFX2402C is the ideal solution for single antenna applications, and the ideal building block for MIMO applications.

RFX2402C has simple and low-voltage CMOS control logic, and requires minimal external components for system implementation. The PA power detector circuit is also integrated.

Applications

- 802.11b/g/n Access Point
- 802.11b/g/n NIC PC Card
- 802.11b/g/n Multimedia Applications
- 802.11b/g/n Mobile Platforms
- 802.11b/g/n Embedded Applications
- Other 2.4GHz Transceivers

Parameters	Value	Conditions
TX		
Small-Signal Gain	29dB	In-band, Typical, TX Enabled
Output P1dB	+24dBm	In-band, Typical, TX Enabled (3.3 VDC)
Quiescent Current	70mA	Typical, TX Enabled, No RF Applied
Linear Output Power 1	+18dBm	802.11g/n 54Mbps OFDM EVM < 3.5%
Linear Output Power 2	+21dBm	802.11b 1Mbps CCK Mask Compliance
Linear Output 1 Current	130mA	Typical, +18dBm at ANT
2^{nd} /3^{rd} Harmonic	-36dBc/-40dBc	+21dBm at ANT
RX		
Small-Signal Gain	12dB	In-band, Typical, RX Enabled
Noise Figure	2.7dB	In-band, Typical, RX Enabled
Input P1dB	-5dBm	In-band
Quiescent Current	9mA	RX Enabled
CHIP		
Operating Frequency	2.4-2.5GHz	TX or RX Enabled
Supply VCC	2.7-3.6V	
Shut-down Current	0.05uA	
Input Output Return Loss	-9dB to -15dB	RF Ports, Typical, In Band
RF Port Impedance	50-Ohm	Single-ended
Control Signals	High Enable	CMOS Logic, <0.3V Low >1.2V High
Package	16-QFN	3.0mm x 3.0mm x 0.45mm